

H.A

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/710,683	LEVIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Roberto Velez	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1. ☒ This communication is responsive to 07/28/2004.
- 2. ☒ The allowed claim(s) is/are 1-7.
- 3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  - 1. ☐ Certified copies of the priority documents have been received.
  - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

- 4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  - 5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
- 6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>07/2004, 08/2004</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                                       | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

## DETAILED ACTION

### *Allowable Subject Matter*

1. Claims 1-7 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render obvious, a system for remotely measuring signals in a circuit under test comprising: means for gating said amplifier with a first selected signal having a first selected frequency; to modulate, in the amplifier, the converted Hall voltage to provide, at the output of said first amplifier, remote magnetic sensing means for detecting said pulsating magnetic field and for providing a electrical output directly proportional to the current in said first path, as further defined as claim 1.

A method of remotely detecting and establishing the value of currents in circuits in an integrated semiconductor device comprising the steps of: detecting said pulsating first magnetic field with a first remote sensor to provide an output signal proportional to said first sensed current, as further defined as claim 4.

A semiconductor testing apparatus comprising: means for gating said amplifier with a first selected signal having a first selected frequency; to modulate, in the amplifier, the converted Hall voltage to provide, at the output of said first amplifier, remote magnetic sensing means for detecting said pulsating magnetic field and for providing a electrical output directly proportional to the current in said first path, as further defined as claim 4.

Dependent claims 2-3, 5-6 are also allowed.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Black, Jr. et al. (US Pat. 5,831,426)*** shows (Fig. 4) a magnetic current sensor comprising: an input terminal [26] to establish a current through sensor [54] causing a magnetic field, an amplifier [58] serving as a voltage to current inverter and to supply an output current.

***Toyoda et al. (US Pat. 6,043,649)*** shows (Fig. 2A) a magnetometric sensor using a voltage step up circuit and a SQUID element to measure a magnetic field.

***Beer et al. (US Pat. 6,891,431)*** shows (Fig. 2) an integrated semiconductor circuit configuration comprising: means [PV<sub>DD</sub>] for supplying a signal [40] to a Hall effect sensor [60], wherein the Hall effect sensor [60] converts the signal to a Hall voltage and feeds it to a comparison circuit.

***Kandori et al. (US PG PUB. 2004/0263162)*** shows (Figures 1-9) a magnetic field measurement apparatus.

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Velez whose telephone number is 571-272-8597. The examiner can normally be reached on Monday-Friday 8:00am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nguyen Ha can be reached on 571-272-1678. The fax


Art Unit: 2829

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RV

Roberto Velez  
Patent Examiner

 06/06/06  
**PARESH PATEL**  
**PRIMARY EXAMINER**